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William T. Ellis
FOLEY & LARDNER
Washington Harbour
3000 K Street, N. W., Suite 500
Washington, DC 20007-5109

EXAMINER

ZHEN, LI B

ART UNIT

PAPER NUMBER

2194

DATE MAILED: 06/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/741,860

Applicant(s)

MOORE ET AL.

Examiner

Li B. Zhen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 April 2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1 – 24 are pending in the current application.

Response to Arguments

2. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1 – 12, 15 – 18, 20, 21, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over “Designing a flexible services-based architecture for Internet Applications” [hereinafter Mehra, cited in the previous office action] in view of U.S. Patent No. 6,732,175 to Abjanic.**

5. As to claim 1, Mehra teaches the invention substantially as claimed including an interface for interfacing between front-end data processing systems and back-end data processing systems [p. 31, figure in section 3, Client Layer and Database/Existing Applications], the interface comprising an engine [p. 31, figure in section 3, Context Processor], a node layer comprising at least one node [p. 31, figure in section 3,

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Business Logic Layer], and a utility layer comprising at least one utility [p. 31, figure in section 3, Interface], and in which:

the engine configured to receive a message containing a request from a front-end system for a transaction to be performed by a back-end system [p. 32, section 3.2.1],

each node represents business logic interfaces to a back-end system [p. 32, section 3.3.1],

each node exposes business logic capabilities to the engine [p. 32, the interface of the Business Controller Object, section 3.3.2];

each utility is coupled as a proxy to a back-end system, and is configured to for receiving a transaction request from a node, for converting said request to a back-end system request, for receiving a response from the back-end system, and for routing a response to the requesting node [p. 32, sections 3.4.1 and 3.4.2],

each node routes a received response to the engine [p. 32, section 3.2.1 "The business logic layer...returns an XML output data stream"]; and

the engine routes a response to the requesting front-end system [p. 32, section 3.2.1 "The style sheet rendering engine merges the XML data stream with the appropriate XSL template file to render HTML output to the browser."].

6. Although, Mehra teaches the invention substantially, Mehra does not specifically disclose the engines comprising means for interpreting the message to select a relevant node from a plurality of nodes for interfacing, wherein the engine does not contain any

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business logic and the message not containing an operation identifier of the transaction to be performed.

However, Abjanic teaches interfacing between front-end data processing systems [clients, for example, may include a server 110 that includes an application program 112, a computer 120 (such as a personal computer or laptop) that may include a web browser 122 and a wireless device 132, such as a personal digital assistant (PDA) or a wireless (or cellular) telephone; col. 3, lines 47 – 65] and back-end data processing systems [data center 135 includes several processing nodes (e.g., servers), including server 150, server 160 and server 170 for handling the various orders, business transactions and other requests; col. 3, line 65 – col. 4, line 12], an engine configured to receive a message containing a request from a front-end system for a transaction to be performed by a back-end system [content based message director (or XML director) can receive and switch messages based upon application data or business transaction information regardless of the transport or protocol used to transport the message; col. 3, lines 38 – 47; col. 4, lines 50 – 60], and means for interpreting said message to select a relevant node from a plurality of nodes for interfacing [application data or XML data (including markup characters and/or character data) is then compared to one or more configuration patterns or queries (which may be stored in the director 145) to determine if there is a match; col. 6, lines 50 – 63] the message not containing an operation identifier of the transaction to be performed [a match is found between the business transaction information and the pattern, the content based switching logic 316 outputs a switching decision to a output interface

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320. The switching decision may, for example, indicate that a match was found and identify the processing node or server; col. 9, lines 29 – 35 and col. 3, lines 14 – 23] wherein the engine does not contain any business logic [message director 145 to direct or switch messages to a selected server based upon the content of application data, such as business transaction information, col. 4, lines 50 – 60; examiner notes that the message director sends messages to the server or processing node to process the message, col. 3, lines 10 – 22, therefore, the message director does not contain any business logic], each node represents business logic interfaces to a back-end system, each node exposes business logic capabilities to the engine [different types of services (or different levels of service) to be provided for messages based on the content of the application data; col. 7, lines 33 – 43];

the engine comprises means for using the exposed node business logic capabilities to build a process map [configuration pattern; col. 7, lines 6 – 33] linking received request messages with nodes, wherein the engine uses the process map to select the relevant node from the plurality of nodes [Based on the above configuration patterns, the director 145 would direct a message to server; col. 7, lines 23 – 33]; and

each utility is coupled as a proxy to a back-end system, and is configured to for receiving a transaction request from a node, for converting said request to a back-end system request, for receiving a response from the back-end system, and for routing a response to the requesting node [Broker 410 performs address translation on the header(s) for the message; col. 10, lines 33 – 67].

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7. It would have been obvious to a person of ordinary skill in the art at the time of the invention to apply the teaching of interpreting the message to select a relevant node from a plurality of nodes for interfacing, wherein the engine does not contain any business logic and the message not containing an operation identifier of the transaction to be performed as taught by Abjanic to the invention of Mehra because this offloads the burden of examining the application data or business transaction information and then switching to a particular processing node from application servers [col. 3, lines 33 - 39 of Abjanic].

8. As to claim 2 Mehra as modified teaches the engine comprises means for dynamically maintains the process map according to the exposed node business logic capabilities [col. 6, lines 50 – 63 of Abjanic].

9. As to claim 3, Mehra teaches the process map comprises a script file [XML is used for structured data message; Section 2, p. 31].

10. As to claim 4, Mehra as modified teaches the process map comprises script messages, each message having a map associating incoming parameter names with standardised names [col. 7, lines 23 – 33 of Abjanic].

11. As to claim 5, Mehra as modified teaches each message of the process map specifies an associated node, a list of the parameters the node requires, and values which it returns for a type of incoming message [col. 7, lines 13 – 33 of Abjanic].

12. As to claim 6, Mehra teaches that the utilities interface with the node layer according to a uniform interface model ["...that provide an abstraction layer that encapsulates access..."; section 3.3.2, p. 32].

13. As to claim 7, Mehra as modified teaches the engine calls a plurality of nodes for a transaction request [col. 7, lines 2 – 6 of Abjanic].

14. As to claim 8, Mehra as modified teaches the engine is configured for calling nodes in sequence, and for passing the output from a previous node to a next node [col. 9, lines 50 – 55 of Abjanic].

15. As to claim 9, Mehra as modified teaches the engine and each node uses a hashtable mapping keys to values for passing data and control to each other [col. 10, lines 33 – 67 of Abjanic].

16. As to claims 10 and 11, Mehra as modified teaches the engine and the nodes each use a hashtable for returning a result from a back-end system [col. 10, lines 33 – 67 of Abjanic].

17. As to claim 12, Mehra teaches each of the engine and each node comprise an object instantiated from an object-oriented class [section 3.3.2, p. 32].

18. As to claim 15, Mehra as modified teaches the engine comprises an externally visible engine class ["Servlet"; section 3.2.2 "Servlet" of Mehra], an object of which comprises means for instantiating: a processor object for instantiating said node objects ["Business Object Factory"; section 3.3.1, p. 31 of Mehra]; and a loader object for loading the process map, and for determining node objects associated with a received message [col. 6, lines 50 – 63 of Abjanic].

19. As to claim 16, Mehra as modified teaches the engine is configured for instantiating a parser object for parsing a received message [parses all or part of the application data; col. 6, lines 39 – 49 of Abjanic], for placing extracted data in a hashtable, and for returning the hashtable to the engine object [col. 10, lines 33 – 67 of Abjanic].

20. As to claim 17, Mehra as modified teaches the engine comprises a builder object configured for automatically updating the process map according to capabilities exposed by node classes [col. 6, lines 50 – 63 of Abjanic].

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21. As to claim 18, Mehra as modified teaches each node class comprises a method for returning a string to the engine indicating the node capabilities [program may detect the failure of one or more servers and/or detect the response time of servers, and then update the configuration pattern to account for these changes in the network; col. 6, lines 56 – 63 of Abjanic].

22. As to claim 20, Mehra as modified teaches a method of interfacing between front-end data processing systems and back-end data processing systems [p. 31, figure in section 3, Client Layer and Database/Existing Applications of Mehra], the method being performed by an interface comprising an engine [p. 31, figure in section 3, Context Processor of Mehra] for communicating with the front-end systems and a utility layer for communicating with the back-end systems, the method comprising the steps of:

the engine receiving from a front-end system a message incorporating a request for a transaction to be performed by a back end system but not indicating a particular back-end system suitable for the transaction [p. 32, section 3.2.1 of Mehra], wherein the message does not include an operation identifier identifying the transaction to be performed [a match is found between the business transaction information and the pattern, the content based switching logic 316 outputs a switching decision to a output interface 320. The switching decision may, for example, indicate that a match was found and identify the processing node or server; col. 9, lines 29 – 35 and col. 3, lines 14 – 23 of Abjanic; examiner notes the identity of the processing node is determined by the switching logic and not the message],

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the engine using a process map [configuration pattern; col. 7, lines 6 – 33 of Abjanic] to select one of a plurality of nodes in a node layer which may provide a suitable link to the back-end systems for the request [col. 7, lines 23 – 33 of Abjanic], the process map linking message types to nodes according to exposed business logic capabilities of the nodes [col. 7, lines 33 – 43 of Abjanic], wherein the engine does not contain any business logic [message director 145 to direct or switch messages to a selected server based upon the content of application data, such as business transaction information, col. 4, lines 50 – 60 of Abjanic; examiner notes that the message director sends messages to the server or processing node to process the message, col. 3, lines 10 – 22 of Abjanic, therefore, the message director does not contain any business logic],

the engine passing a request to the selected node [p. 32, the interface of the Business Controller Object, section 3.3.2 of Mehra],

the selected node communicating with a utility with which it is associated to instruct the utility to perform the transaction, receiving a response from the utility, and passing the response back to the node [p. 32, sections 3.4.1 and 3.4.2 of Mehra],

the node passing the response back to the engine [p. 32, section 3.2.1 “The business logic layer...returns an XML output data stream” of Mehra], and the engine passing the response back to the requesting front-end [p. 32, section 3.2.1 “The style sheet rendering engine merges the XML data stream with the appropriate XSL template file to render HTML output to the browser” of Mehra].

23. As to claim 21, this is rejected for the same reasons as claims 10 and 15 above.

24. As to claim 23, Mehra teaches the process map is an XML script file [section 3.1.1, p. 31].

25. As to claim 24, this is a product claim that corresponds to method claim 20; note the rejection to claim 20 above, which also meets this product claim.

26. Claims 13, 14, 19 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mehra and Abjanic further in view of U.S. Patent No. 6,434,555 to Frolund et al. [hereinafter Frolund, cited in previous office action].

27. As to claim 13, Mehra and Abjanic teach that each of the engine and each node comprises means for using a hashtable which maps keys to values for passing data and control to each other, and the engine comprises means for passing a hashtable as a parameter as in claims 9 and 10 above. Mehra and Abjanic do not teach an execute method, a commit method, and a rollback method of a node object.

However, Frolund teaches an execute method, a commit method, and a rollback method of a node object [Fig. 3].

28. It would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the execute, commit, and rollback methods of Frolund with the

systems of Mehra and Abjanic because this provides outcome determination so that the result of a transaction can be used to make a decision [col. 2, lines 28 – 39 of Frolund].

29. As to claim 14, Mehra as modified teaches the engine is configured for activating a sequence of nodes for a transaction, and each node is configured for performing a rollback if a transaction fails [col. 4, lines 21 – 52 of Frolund].

30. As to claim 19, this is similar to claim 1 and is rejected for the same reasons as claim 1. As to the additional limitations, Mehra as modified teaches each of the engine and each node comprises an object instantiated from an object-oriented class [section 3.3.2, p. 32 of Mehra] and each of the engine and each node comprises means for using a hashtable which maps keys to values for passing data and control to each other, and the engine comprises means for passing a hashtable as a parameter in an execute method, a commit method, and a rollback method of a node object [col. 4, lines 21 – 52 of Frolund].

31. As to claim 22, Mehra as modified teaches the engine passes a hashtable as a parameter in an execute method, a commit method, and a rollback method, and the node rolls back according to the rollback method if the transaction fails [col. 4, lines 21 – 52 of Frolund].

Conclusion

32. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


33. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Li B. Zhen whose telephone number is (571) 272-3768. The examiner can normally be reached on Mon - Fri, 8:30am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Li B. Zhen
Examiner
Art Unit 2194

lbz



ST/JOHN COURTENAY III
PRIMARY EXAMINER